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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,345	05/07/2001	Kyungho Park	P 279468 FEL0104-US-A	1119
909	7590	02/02/2005	EXAMINER LEADER, WILLIAM T	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			ART UNIT 1742	PAPER NUMBER

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/849,345

Applicant(s)

PARK ET AL.

Examiner

William T. Leader

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-18 is/are pending in the application.
- 4a) Of the above claim(s) 15-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 and 13 is/are allowed.
- 6) ☒ Claim(s) 6-11 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Receipt of the papers filed on November 18, 2004, is acknowledged.

Claims 1-5 have been canceled. Claims 6-14 are under consideration. Claims

12 and 13, previously objected to, have been written independent form.

Consequently, claims 12 and 13 are allowed. Claims 15-18 remain

withdrawn from consideration.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Applicant's amendment to the claims is deemed to have overcome the rejection of claims 6, 7, 11 and 14 under 35 U.S.C. 102.

Claim Rejections - 35 USC § 103

4. Claims 6, 7, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorne et al (6,132,587) in view of either of Ritzdorf et al (6,099,712) or Kosaki et al (6,500,325).

5. Jorne et al and Yoshioka et al are interpreted and applied as in the previous office action. Applicant has amended independent claims 6 and 11 to recite a housing that accommodates the first contact and prevents an electrolyte from intruding inside the housing. While Jorne discloses

providing at least one contact point making electrical contact with the center of the substrate, Jorne is silent as to the presence of a housing that accommodates the contact. In evaluating the language of the claims as amended by applicant, the term "housing" is interpreted according to a standard dictionary definition. "Housing" is defined as "something that covers or protects" (Merriam Webster's Collegiate Dictionary, tenth edition).

6. The Ritzdorf et al patent is directed to an apparatus and method for electroplating onto a semiconductor wafer. Electrical contact to the wafer is made through a plurality of finger assemblies. A description of the finger assemblies begins at column 20, line 53. As shown in figure 22, the distal end of each finger assembly includes electrode contact 858. The contact is surrounded by seal 868 which may be considered to be a housing. Ritzdorf et al teach that a continuous seal is created about the periphery of the electrode contact thereby protecting the contact from any materials, such as the plating materials which are used during the electroplating process. See column 22, line 63 to column 23, line 39, particularly column 23, lines 35-39.

7. The Kosaki et al patent is directed to a method of plating onto semiconductor wafers. Electrical contact with the wafer is made through electrical contact 10. As shown in figure 1B and described at column 6, lines 16-20, contact 10 is incorporated in sealing element 11. Sealing element 11 thus forms a housing around contact 10.

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8. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have provided a housing that accommodates an electrical contact in the apparatus and method of Jorne as taught by Ritzdorf et al and Kosaki et al because the contact would have been protected from the electrolyte.

9. Claims 8, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorne et al in view of Ritzdorf et al or Kosaki et al as applied to claims 6, 7, 11 and 14 above, and further in view of Yoshioka et al (6,500,317).

10. The Yoshioka et al patent is interpreted and applied as in the previous office action. As indicated in the prior office action, Jorne teaches the use of a plurality of contacts but does not specifically disclose that some of the contacts are connected to a second power supply in addition to the first power supply. The Yoshioka et al patent is directed to a method and apparatus for electroplating onto a semiconductor wafer. A plurality of feeder contacts 15 is provided to supply power to the wafer. Plating current is supplied by eight plating current supply circuits 42-1 to 42-8. Each plating supply circuit is provided with a current control circuit 39 which sets the circuit value based

on data from the CPU. Thus, Yoshioka et al disclose second power supply portions as recited in claims 8, 9 and 10.

11. It would have been obvious at the time the invention was made to have utilized a separate power supply in Jorne for each contact, particularly where each power supply is operated by a computer, as taught by Yoshioka et al because control of the plating process would have been improved.

Response to Arguments

12. Applicant's arguments with respect to claims 6-11 and 14 have been carefully considered but are not deemed persuasive in view of the modified grounds of rejection detailed above.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Steenkiste et al patent (6,758,958) is directed to plating a conductive pattern on substrates such as semiconductor wafers. In the "Technological Background" section, Steenkiste et al explain that a recognized problem in electroplating a semiconductor wafer is that the electrical contact with the wafer is exposed to the plating solution, becomes parasitically plated, and has to be cleaned regularly (column 1, lines 57-60).

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14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax

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phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WL

William Leader
January 27, 2005

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700